REMARKS

Claims 1-13 remain in the application, with claim 1 amended and with claims 3,5,6 and 13 rewritten in independent form and claims 11 and 12 now depend from claim 13.

The Examiner has indicated that claims 3-10 and 13 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. By the present amendment, claims 3, 5, 6 and 13 are so rewritten in independent form including all of the limitations of the base claim and any intervening claims.. Accordingly, claims 3-13 should now be in condition for allowance.

Reconsideration is respectfully requested for claims 1 and 2 as amended to further distinguish the cited prior art.

Claims 1 and 2 have been rejected under 35 USC 102(b) as being anticipated by Vasanawala et al. U.S. Patent No. 6,307,368. The Examiner refers to Vasanawala et al. as allegedly teaching the weighting of image data to emphasize higher signals and the combining of weighted data to establish an image signal based on the combined weighted image data.

This rejection is respectfully traversed with respect to claims 1 and 2 as amended. As defined by claim 1, the claimed method of reducing artifacts in steady state free precession (SSFP) signals for use in magnetic resonance imaging comprises the steps of a) applying a plurality of SSFP imaging sequences to an object to be imaged, and b) acquiring image data for each of the SSFP imaging sequences. This is taught by Vasanawala et al.

However, step c) now refers to weighting the image data to emphasize higher magnitude signals, and step d) specifies combining the weighted image data from all imaging sequences. Step d) then establishes an image signal based on the combined weighted image data.

The cited Vasanawala et al. patent does not disclose these steps of weighting image data to emphasize higher magnitude signals, and combining the weighted image data from all imaging sequences to establish an image signal based on the combined weighted image data.

Vasanawala et al. do "weight" image data for spectral selectivity as noted in columns 4 and 5, lines 63-67 and 1-12 referenced by the Examiner. Note also columns 6, lines 25-64, which refer to generating a arbitrary spectral response (line 26) and reconstructing two images with one image generated from spans within a certain band of resonance frequencies and the other image from spans within another band of resonance frequencies (line 50-55). Column 7 further describes combining signals from "echoes" that have different phase profiles due to their different dependence on resonance frequency which causes destructive interference form some spectral bands which suppresses signals from spans at those frequencies. (lines 17-22).

However, Vasanawala et al. do not disclose or suggest weighting image data to emphasize higher magnitude signals and combining the weighted image data from all imaging sequences, as now specified in claim 1 as amended. Vasanawala et al. do described in column 5, lines 62 and 63, of complexly summing data for four experiments to generate new case base data.

However, this does not suggest the weighting of the image data to emphasize higher magnitude signals. See also page 4 of the specification with reference to Vasanawala et al., Magn. Reson. Med. 2000; 43:82-90 which describes a complex-sum technique which consists in simply summing the complex reconstructed images from each acquisition. As further noted on page 4, the present invention employs identical data acquisition as in the prior art, but the final reconstructed image is formed by weighting the image data such as by taking the square root of the sum of magnitudes of all complex image data squared. This is contrasted with the prior art use of maximum intensity and complex-sum combination (e.g. Vasanawala et al.) and yields a significant increase in signal to noise ratio (SNR).

For the foregoing reasons, it is respectfully submitted that the methods defined by claims 1 and 2 as amended are neither shown nor suggested by the cited Vasanawala et al. patent.

The cited Vasanawala et al. patent is not believed relevant to the invention as defined by claims 3-13 since Vasanawala et al. do not show or suggest a method of reducing artifacts in SSFP signals as so defined by the claims.

Since claims 1 and 2 as amended are patentable over Vasanawala et al. under 35 USC 102(b) and 103, since claims 3, 5, 6 and 13 have been rewritten in independent form including all limitation of the base claim and any intervening claims, and since the Examiner has indicated that claims 1-3, 5, 6, and 13 would be allowable if so rewritten in independent form, and since all other claims depend therefrom, all as above set forth, it is requested that claims 3-13 as amended be allowed and the case advanced to issue.

Should the Examiner have any questions or comments concerning the present amendment and response, a telephone call to the undersigned attorney (650-314-5311) is requested.

Respectfully submitted,
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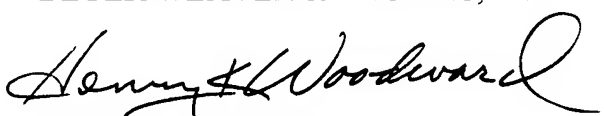

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